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IS THERE A DIFFERENCE IN BLADDER WALL THICKNESS BETWEEN CONTINENT AND WOMEN WITH STRESS URINARY INCONTINENCE OR OVERACTIVE BLADDER ?

Hypothesis / aims of study

Recent population-based literature confirms urinary incontinence and overactive bladder as highly prevalent conditions and with a substantial economic and human burden. There is a need to improve understanding and management of these conditions [1]. The objective of this study was to evaluate the bladder wall thickness in patients with stress urinary incontinence (SUI) and overactive bladder (OAB), also compare them with continent women.

Study design, materials and methods

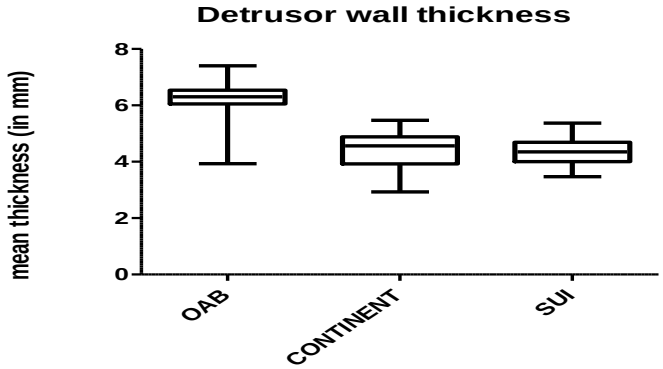
In a tertiary center, we conducted a cross sectional study evaluating patients according to anamnesis and physical exam. In patients with lower urinary tract symptoms, an urodynamic test completed the evaluation. Three groups were formed: continent, stress urinary incontinence and overactive bladder syndrome. A transvaginal ultrasound scan was performed in supine position and three measures (at the thickest part) of the bladder wall were obtained:– trigone, dome, and anterior wall. We used Haylen´s method to ensure the post micturiction residual volume was lower than 50ml.
The mean value of detrusor thickness was calculated and compared between the groups.

Results

75 patients (Mean age 47,2 years, Range 18-81 years) were included in this study. The mean bladder wall thickness in the overactive bladder syndrome group was significantly higher than the continent and SUI groups (Kruskal Wallis test, p<0,0001). There was no difference between the continent and SUI group.

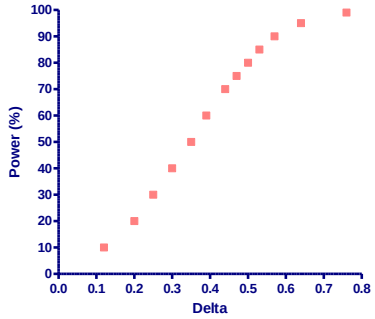
	OAB	Continent	SUI
Mean (mm)	6,149	4,430	4,379
Lower 95% CI of mean	5,841	4,122	4,183
Upper 95% CI of mean	6,458	4,739	4,574

Kruskal-Wallis test			
P value	< 0,0001		
Exact or approximate P value?	Gaussian Approximation		
P value summary	***		
Do the medians vary signif. (P < 0.05)	Yes		
Number of groups	3		
Kruskal-Wallis statistic	40		
Dunn's Multiple Comparison Test	Difference in rank sum	Significant? P < 0,05?	Summary
OAB vs CONTINENT	32	Yes	***
OAB vs SUI	35	Yes	***
CONTINENT vs SUI	2,9	No	ns



Power of the experiment
Std Deviation: **0.80**
Expected difference between means : **1.00 mm**
Significancy: **5%**

Power of the test: **80%**
Hipotesis test: **bitailored**
Size of the sample to each group: **10**



Interpretation of results

Overactive bladder syndrome patients have a significant higher mean bladder wall thickness compared to continent and SUI patients.

Concluding message

There is a significant morphological difference in OAB patient's bladder, but the role of the ultrasound measurement in the evaluation of these patients is not clear.

References

1. Milsom I. Lower urinary tract symptoms in women. Curr Opin Urol. 2009 Jul;19(4):337-41.

Specify source of funding or grant	**NONE**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**CEP- UNIFESP**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**